

## **WHAT IS CLAIMED IS**

1. A system for detecting fluids in a microfluidic component (1) having the following features:
  - The microfluidic component (1) has at least one microchannel (4) including a limitation wall (3) which has two surfaces (3', 3'') which, facing the microchannel (4) in a transparent area, are inclined towards each other at an acute angle,
  - a photo transmitter (6) and a photo receiver (7) which are disposed outside the component (1) are directed to the inclined surfaces (3', 3'') in the transparent area of the limitation wall (3) in such a way that if a gas is waiting in the microchannel (4) on the two surfaces (3', 3'') a light ray emitted by the photo transmitter (6) impinges on the photo receiver (7) following a total reflection on the two surfaces (3', 3'') and, if a liquid is waiting in the microchannel (4), enters the microchannel (4) on at least one of the two surfaces (3', 3'') and, as a result, the

incidence of light into the photo receiver (7) is reduced or prohibited.

2. The system according to claim 1, wherein the microchannel (4) is of a substantially constant cross-section at least in the area of the inclined surfaces (3', 3'') and in the areas adjoining them.
3. The system according to claim 1, wherein the limitation wall (2) disposed opposite the limitation wall (3) having the inclined surfaces (3', 3'') has substantially parallel upper and lower limitations walls (2', 2'') at least in the areas opposite the inclined surfaces (3', 3'') and in the areas adjoining them.
4. The system according to claim 1, wherein the limitation wall (2) disposed opposite the limitation wall (3) having the inclined surfaces (3', 3'') absorbs light at least in the areas disposed opposite the inclined surfaces.
5. The system according to claim 1, wherein the angle between the two surfaces (3', 3'') is about 80 to 90°.

6. The system according to claim 1, wherein the component (1) has a plurality of superposed walls (2, 3).
7. The system according to claim 1, wherein the photo transmitter (6) and the photo receiver (7) are designed in a single component.
8. The system according to claim 1, wherein the photo transmitter (6) and the photo receiver (7) are separated from the microfluidic component (1).
9. The system according to claim 1, wherein the photo transmitter (6) and the photo receiver (7) operate in the infrared range.
10. The system according to claim 1, which is integrated in an apparatus to which the microfluidic component (1) is detachably connected.
11. The system according to claim 1, wherein the microfluidic component (1) is a disposable.
12. The system according to claim 10, wherein the microfluidic component (1) is inserted in a receptacle of the apparatus.

13. The system according to claim 10, wherein the apparatus has a detachable locked connection and/or interlocked connection and/or magnetic connection to the microfluidic component (1).
14. The system according to claim 1, wherein the apparatus, on the side of the microfluidic component (1) which is disposed opposite the side including the photo transmitter (6) and the photo receiver (7), has a wall (5) with specific reflection characteristics which, if no microfluidic component (1) exists, results in a specific light incidence of the light originating from the photo transmitter (6) into the photo receiver (7), which differs from the light incidence which occurs if a microfluidic component (1) exists.
15. The system according to claim 10, wherein the apparatus is a hand-held apparatus.
16. The system according to claim 1, wherein the microfluidic component (1) is a cartridge of a microproportioning system.

17. The system according to claim 1, wherein the microfluidic component (1) is a proportioning component, an analytical chip, a PCR component, a clean-up component, a liquid-conveying component, a component for capillary electrophoresis or a rectification column component.
18. The system according to claim 1, wherein an evaluation device initiates a detection of a gas and/or liquid of a delivery device and/or a turn-on or turn-off of an apparatus and/or a function of the apparatus.